

## A new species of *Acronychia* (Rutaceae) from Australia

By T. G. Hartley

Herbarium Australiense, C.S.I.R.O.

Division of Plant Industry, Canberra

and

B. P. M. Hyland

Queensland Regional Station, C.S.I.R.O.

Division of Forest Research, Atherton.

### Summary

A new species of *Acronychia* from Australia, *A. eungellensis*, is described with notes on its distribution, ecology, and relationships to other species.

Since the publication of a revision of the genus *Acronychia* (Hartley 1974), a new species of the genus has been discovered in east central Queensland. This plant is described below with notes on its distribution, ecology, and relationships to other species. Also, the changes and additions required to accommodate it in the key to species that was presented in the revision are given. Specimens cited as QRS are deposited at the herbarium of the Queensland Regional Station, C.S.I.R.O. Division of Forest Research, Atherton. The remaining specimens cited are deposited at the Herbarium Australiense, C.S.I.R.O., Division of Plant Industry, Canberra (CANB).

### *Acronychia eungellensis* Hartley & Hyland, sp. nov. Figure 1.

Arbor 20 m alta; ramulis glabris; foliis unifoliolatis; petiolo glabro, 1-1.8 cm longo; foliolo subcoriaceo, glabro, elliptico-oblongo, 5.5-8 cm longo, 2-3 cm lato, basi acuto vel cuneato, apice obtuso vel rotundato, venis primariis utrinsecus costae 10-12; inflorescentiis paucifloris vel plurifloris, 2-9 cm longis, axe et ramis glabris, pedicellis glabris, 4-5.5 mm longis; floribus 7.5-8.5 mm longis; sepalis glabris, rotundatis, 1 mm longis, 1.7 mm latis; petalis glabris; disco glabro, 0.7-0.8 mm alto, ca. 2 mm lato; ovario glabro, fissuris septicidalibus ad basin extensis; stylo apicem versus glabro, aliter pubescenti; fructibus roseis, mox luteolis, in sico rubiginosis, glabris, fissuris septicidalibus ad basin extensis, ambitu late ovatis vel ellipticis, valde 4-lobatis, ca. 10 mm latis, basi truncatis, apice depressis; epicarpio in sicco minus quam 0.5 mm crasso, semicarnoso, mesocarpio non evidenti; endocarpio pergamentaceo; seminibus atrorubiginosis, ca. 5 mm longis. Holotypus: *Hyland* 9129 (CANB).

Tree 20 m high; branchlets glabrous. Leaves unifoliolate; petiole glabrous, 1-1.8 cm long; leaflet subcoriaceous, glabrous, elliptic-oblong, 5.5-8 cm long, 2-3 cm wide, the base acute to cuneate, the apex obtuse to rounded, the main veins 10 to 12 on each side of the midrib. Inflorescences few- to several-flowered, 2-9 cm long; axis and branches glabrous; pedicels glabrous, 4-5.5 mm long. Flowers 7.5-8.5 mm long; sepals glabrous, rounded, 1 mm long, 1.7 mm wide; petals glabrous; disc glabrous, 0.7-0.8 mm high, about 2 mm wide; ovary glabrous, with septicidal fissures extending to the base; style glabrous toward the apex, otherwise pubescent. Fruits rose-red, becoming yellowish at maturity, drying reddish brown, glabrous, with septicidal fissures extending to the base, broadly ovate to elliptic in outline, strongly 4-lobed, about 10 mm wide, the base truncate, the apex depressed; epicarp drying less

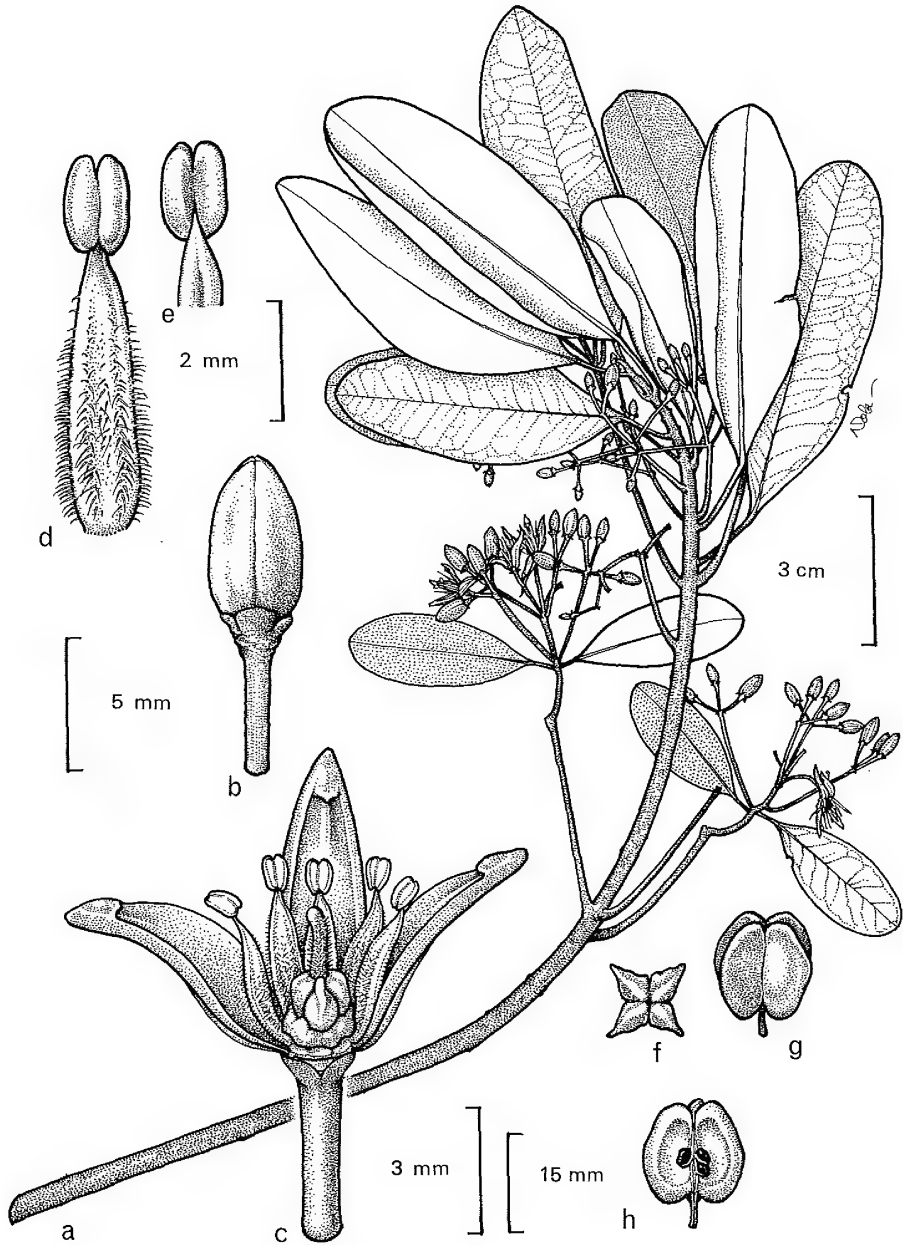


Figure 31. *Acronychia eungellensis* Hartley & B. Hyland: **a**, flowering branchlet; **b**, flower bud; **c**, flower at anthesis with one petal and three stamens removed; **d**, stamen in adaxial view; **e**, anther in abaxial view; **f-h**, fruit in top and side view and longitudinal section (a-e drawn from *Hyland 9129*, f-h drawn from *Hyland 4197 RFK*). Note: the fruit was drawn from spirit material which is somewhat larger than the dried material the description is based on.

than 0.5 mm thick, semi-fleshy, without evident mesocarp; endocarp pergamentaceous. Seeds dark reddish brown, about 5 mm long. (Fig. 31)

**Field characters.** Medium tree 20 m tall, 30 cm d.b.h.; buttresses absent. Bark thin (less than 2.5 cm thick), smoothish, lenticels inconspicuous, subrhynchidome layer pink-red; outer blaze pink, marked with pale longitudinal stripes; inner blaze pink, fibrous.

**Distribution.** Known only from the type locality.

**Ecology.** Mountain rain forest, 920 m. Annual rainfall approximately 2000 mm, much of which falls as light rain or drizzle from the southeast trade winds. Parent soil material granite or rhyolite. Topsoil grey and loamy, its surface characterised by series of mounds and depressions suggesting waterlogging at some time during the year. The surrounding forest is in poor health with a large percentage of dead and dying trees, probably as a result of *Phytophthora cinnamomi* infection. The tree from which the type and paratype collections were made was still in good health in October, 1976. Growing in its immediate vicinity were *Balanops australiana*, *Beilschmiedia* sp. aff. *B. obtusifolia*, and *Elaeocarpus eumundi*. The forest area is otherwise characterised by *Cinnamomum laubatii*, *Cinnamomum oliveri*, *Eugenia* (*Syzygium*) sp. aff. *E. angophoroides*, *Polyosma alangiacea*, *Schizomeria ovata*, and *Sphenostemon lobosporus*.

**Queensland.** SOUTH KENNEDY DISTRICT: Eungella Range, State Forest Reserve 62, Gamma, 21° 00' S, 148° 35' E., *Hyland 4197 RFK* (CANB, QRS), *9129* (CANB, holotype; QRS, isotype).

In having fruits and ovaries with septicidal fissures extending for at least one half the length, and fruits drying with entirely semifleshy epicarp without evident mesocarp, *Acronychia eungellensis* is apparently one of the most primitive species of the genus. There are six other similarly primitive species (Group Ia in the classification presented in the revision, pp. 475-477), one of which, *A. wilcoxiana*, which ranges from Fraser Island, Queensland (about 650 km SSE of the station for *A. eungellensis*), south to about Gosford, New South Wales, is apparently the closest relative of *A. eungellensis*. It differs from the latter mainly in having larger leaflets (7-21 cm long), shorter pedicels (0.5-3 mm long), and larger flowers (8.5-10 mm long). There are also differences in carpel number: the material of *A. eungellensis* is entirely four-carpellate, whereas in single collections of *A. wilcoxiana* it generally varies from four to six, five to seven, or six to eight.

The following changes and additions are required in the key to species (pp. 478-488 in the revision) to accommodate *Acronychia eungellensis*:

The second part of the 13th couplet in the key to flowering material (p. 479) should be reworded, and an additional couplet, 13a, added.

13. Flowers 7.5-16 mm long..... 13a.

13a. Flowers 7.5-8.5 mm long; ovary 4-carpellate, completely glabrous, with septicidal fissures extending to the base; leaflets subcoriaceous, elliptic-oblong, 5.5-8 cm long; pedicels 4-5.5 mm long..... 21a. *A. eungellensis*.

13a. Flowers 8.5-16 mm long ..... 14.

Following the first part of the 16th couplet in the key to fruiting material (p. 484), an additional couplet, 16a, should be added, and the unnumbered couplet keying to *A. baeuerlenii* and *A. wilcoxiana* replaced with a new one.

- 16a. Fruits subglobose, with narrow, inconspicuous septicial fissures; leaflets chartaceous, 6–11 cm long; pedicels 4–9 mm long; sepals about 1 mm long. . . . . 4. *A. baeuerlenii*.
- 16a. Fruits lobed, with conspicuous septicial fissures.
- Fruits 4- to 8-carpellate; leaflets chartaceous to subcoriaceous, 7–21 cm long; pedicels 0.5–3 mm long; sepals 1.2–2.7 mm long. . . . . 21. *A. wilcoxiana*.
- Fruits 4-carpellate; leaflets subcoriaceous, 5.5–8 cm long; pedicels 4–5.5 mm long; sepals 1 mm long. 21a. . . . . *A. eungellensis*.

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### Literature cited

HARTLEY, T. G. (1974). A revision of the genus *Acronychia* (Rutaceae). *Journal of the Arnold Arboretum* 55: 469–523, 525–567.